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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,189	05/31/2000	Seung-Chan Bang	68268.000002	4177

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EXAMINER	
BURD, KEVIN MICHAEL	
ART UNIT	**PAPER NUMBER**
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/584,189	BANG ET AL.	
	Examiner	Art Unit	
	Kevin M. Burd	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *83,88-94,96,97,117,123,124,152,153,155,156,158 and 161-163* is/are allowed.

6)☒ Claim(s) *180-247* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. This office action, in response to the request for continued examination (RCE) and the amendment filed 12/06/2006, is a non-final office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/6/2006 has been entered.

Response to Arguments

3. Applicant's arguments filed 12/06/2006 have been fully considered but they are not persuasive. Applicant states "the office action has provided no motivation or suggestion as to why one of ordinary skill in the art would be motivated to choose to use a first spreading code for two channels and a second spreading code for a third channel. Ovesjo suggests using a different spreading code on every channel and Yoshida suggests using the same spreading code on every channel." The examiner disagrees. Ovesjo discloses using different spreading codes on each channel. Yoshida discloses using the same spreading code for each I and Q pair of a binary digital signal as shown in figure 4A. Therefore, each I and Q pair of signals of the combination of Ovesjo and Yoshida would use the same spreading code and this spreading code will

be different than the other I and Q pairs of the other input signals. The motivation for the combination of the teachings of Yoshida into the method of Ovesjo is provided in the previous office action. Applicant states "logically, when two codes are used and the first code to be used is $C_{4,1}$, one would expect that the second code to be used to be $C_{4,2}$, not $C_{4,3}$, because $C_{4,1}$, $C_{4,2}$, are sequential to one another in the OVSF code tree." The examiner disagrees. Ovesjo provides an example of selecting code $C_{4,1}$ for one channel and $C_{8,5}$ for a second channel in column 5, lines 27-29. Ovesjo also discloses the code selection is determined by data rates (column 5, lines 31-38). $C_{8,5}$ is on the code $C_{4,3}$ branch. Therefore, when the data rates of these two channels are equal, the selected codes for the channels are $C_{4,1}$ and $C_{4,3}$.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 200-219 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention does not contain a tangible result. Allocating a spreading code to a data channel does not yield a concrete, useful and tangible result.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 220-222 are rejected under 35 U.S.C. 112, first paragraph. A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to *Hyatt* is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 180, 181, 183-185, 187-190, 192-201, 203-205, 207-210, 212-219, 233, 234 and 237-244 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ovesjo et al (US 6,108,369) in view of Yoshida et al (US 5,734,647).

Regarding claims 180, 181, 200 and 201, Ovesjo discloses a method for spreading data using at least three data channels (abstract). The signals to be spread have a plurality of pairs of in-phase and quadrature phase data. This is shown in figure 1A. The plurality of I signals are input to multipliers 10 and 12 where the quadrature signals are input to multipliers 14 and 16. Data and control information is encoded to data and control channels (column 3, lines 2-16). Code generating means generates spreading codes to the channels. These spreading codes are selected on the basis of data rates (column 5, lines 32-44). The spreading codes correspond to an orthogonal variable spreading code (column 5, lines 16-31). The spreading codes allocated to the data channels are represented in the code tree shown in figure 2. Though Ovesjo discloses transmitting a plurality of pairs of I and Q signals as shown in figure 1A, Ovesjo does not disclose allocating a spreading code to a first and second (I and Q) data channel. Yoshida discloses a transmitter that spread an I and Q channel by the same spreading code (column 8, lines 63 to column 9, lines 12 and figure 4A, elements 6, 8 and 34). It would have been obvious for one of ordinary skill in the art at the time of the invention to use the same spreading code for each I and Q pair as taught by Yoshida in the method of Ovesjo to minimize the number and complexity of spreading codes used. This in turn would allow the data rate to be at a maximum. When three data channels are used, the first, second and third data channels are used.

Regarding claims 183, 184, 203 and 204, Ovesjo discloses a plurality of I and Q data channels in figure 1A.

Regarding claims 185, 189, 190, 205, 209 and 210, Ovesjo discloses spreading more than three data channels in figure 1A.

Regarding claims 187-188, 192-197, 207, 208 and 212-217, Ovesjo discloses a plurality of I and Q data channels in figure 1A.

Regarding claims 198, 199, 218 and 219, Ovesjo discloses generating the spreading codes shown in figure 2.

Regarding claims 233, 237 and 240, Ovesjo discloses an apparatus for spreading data using at least three data channels (abstract). The signals to be spread have a plurality of pairs of in-phase and quadrature phase data. This is shown in figure 1A. The plurality of I signals are input to multipliers 10 and 12 where the quadrature signals are input to multipliers 14 and 16. Data and control information is encoded to data and control channels (column 3, lines 2-16). Code generating means generates spreading codes to the channels. These spreading codes are selected on the basis of data rates (column 5, lines 32-44). The spreading codes correspond to an orthogonal variable spreading code (column 5, lines 16-31). The spreading codes allocated to the data channels are represented in the code tree shown in figure 2. Though Ovesjo discloses transmitting a plurality of pairs of I and Q signals as shown in figure 1A, Ovesjo does not disclose allocating a spreading code to a first and second (I and Q) data channel. Yoshida discloses a transmitter that spread an I and Q channel by the same spreading code (column 8, lines 63 to column 9, lines 12 and figure 4A, elements 6, 8 and 34). It would have been obvious for one of ordinary skill in the art at the time of the invention to use the same spreading code for each I and Q pair as taught by

Yoshida in the apparatus of Ovesjo to minimize the number and complexity of spreading codes used. This in turn would allow the data rate to be at a maximum. When three data channels are used, the first, second and third data channels are used.

Regarding claims 234, 238 and 241-243, Ovesjo discloses a plurality of I and Q data channels in figure 1A.

Regarding claim 239, Ovesjo discloses spreading more than three data channels in figure 1A.

Regarding claim 244, Ovesjo discloses generating the spreading codes shown in figure 2.

7. Claims 182, 186, 191, 202, 206, 211, 220-232, 235, 236 and 245-247, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ovesjo et al (US 6,108,369) in view of Yoshida et al (US 5,734,647) further in view of Stewart et al (US 6,009,091).

Regarding claims 182, 186, 191, 202, 206 and 211, the combination of Ovesjo and Yoshida disclose the method stated above. The combination does not disclose the spreading code allocated to the control channel is represented by a code with a spreading factor of 256 and a code number of zero. Stewart discloses the DPCCH consists of known pilot symbols to support channel and SNR estimations and is typically spread by a factor of 256 (column 1, lines 41-47). It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the control code of Stewart in

the combination of Ovesjo and Yoshida to take advantage of the power and rate control used to control the data transmitted (column 1, lines 41-47).

Regarding claims 220, 221, 223, 224, 229 and 232, Ovesjo discloses an apparatus for spreading data using numerous three data channels (abstract). The signals to be spread have a plurality of pairs of in-phase and quadrature phase data. This is shown in figure 1A. The plurality of I signals are input to multipliers 10 and 12 where the quadrature signals are input to multipliers 14 and 16. Data and control information is encoded to data and control channels (column 3, lines 2-16). Code generating means generates spreading codes to the channels. These spreading codes are selected on the basis of data rates (column 5, lines 32-44). The spreading codes correspond to an orthogonal variable spreading code (column 5, lines 16-31). The spreading codes allocated to the data channels are represented in the code tree shown in figure 2. Though Ovesjo discloses transmitting a plurality of pairs of I and Q signals as shown in figure 1A, Ovesjo does not disclose allocating a spreading code to a first and second (I and Q) data channel. Yoshida discloses a transmitter that spread an I and Q channel by the same spreading code (column 8, lines 63 to column 9, lines 12 and figure 4A, elements 6, 8 and 34). It would have been obvious for one of ordinary skill in the art at the time of the invention to use the same spreading code for each I and Q pair as taught by Yoshida in the method of Ovesjo to minimize the number and complexity of spreading codes used. This in turn would allow the data rate to be at a maximum. When three data channels are used, the first, second and third data channels are used. The combination of Ovesjo and Yoshida disclose the method stated above. The combination

does not disclose the spreading code allocated to the control channel is represented by a code with a spreading factor of 256 and a code number of zero. Stewart discloses the DPCCH consists of known pilot symbols to support channel and SNR estimations and is typically spread by a factor of 256 (column 1, lines 41-47). It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the control code of Stewart in the combination of Ovesjo and Yoshida to take advantage of the power and rate control used to control the data transmitted (column 1, lines 41-47).

Regarding claims 225-227 and 230, Ovesjo discloses a plurality of I and Q data channels in figure 1A.

Regarding claims 222, 228 and 231, Ovesjo discloses generating the spreading codes shown in figure 2.

Regarding claims 235 and 245, the combination of Ovesjo and Yoshida disclose the apparatus stated above. The combination does not disclose the spreading code allocated to the control channel is represented by a code with a spreading factor of 256 and a code number of zero. Stewart discloses the DPCCH consists of known pilot symbols to support channel and SNR estimations and is typically spread by a factor of 256 (column 1, lines 41-47). It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the control code of Stewart in the combination of Ovesjo and Yoshida to take advantage of the power and rate control used to control the data transmitted (column 1, lines 41-47).

Regarding claims 236, 246 and 247, Ovesjo discloses spreading more than three data channels in figure 1A.

Allowable Subject Matter

8. Claims 83, 88-94, 96, 97, 117, 123, 124, 152, 153, 155, 156, 158 and 161-163 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd
1/9/2007

KEVIN BURD
PRIMARY EXAMINER

Continuation of Disposition of Claims: Claims pending in the application are 83,88-94,96,97,117,123,124,152,153,155,156,158,161-163 and 180-247.